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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/825,230

04/16/2004

Les Gaston

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EXAMINER

BHAT, NINA NMN

ART UNIT

PAPER NUMBER

1797

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/825,230	Applicant(s) GASTON ET AL.	
	Examiner N. Bhat	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4-3-08.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 25-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 25-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 3, 2008 has been entered. The examiner acknowledges that claims 14-24 have been cancelled and claims 29-30 are newly added.

2. Applicant's arguments regarding Opuku et al. in light of the amended claims are somewhat persuasive. Action on the merits of claims 1-13 and 25 -30 follows:

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-13 and 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens et al., US Patent 6,800,116 further in view of Opuku et al., 3,998,702.

Stevens et al. teach the invention substantially as claimed. Specifically an apparatus is described to deaerate and condition bitumen froth. Stevens teaches an incline plate separate to

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perform deaeration of bituminous froth feed and operates without the need to inject steam into the froth to effect deaeration. The apparatus includes a plurality equidistantly spaced plates defining channels thereby between, the plate separator operates equivalent to a static mixer, the plate separator comprises a plurality of equidistantly spaced plates forming parallel surfaces defining channels there between, The plates are arranged to provide declination angle incline relative to the horizontal.[Note Figures 3 and 4a-4c] which depict the plate profiles and incline plate separator geometry. Stevens et al. teach that froth is admitted to inlet port (21) of the plate separator where the froth is portion among the plurality of channels (18) formed between the parallel inclined plates (14) of the deaerator. The passage of the froth down the channel length provides air bubbles of the froth time to migrate to the lower surface of each upper plate and to accumulate and rise in a counter-current path to the downward flow of bitumen froth. Stevens et al. teach that the rate of flow of the bitumen froth through the static mixer or separator plate should be high enough to introduce a shearing action, the shearing action results in a release of water because of the thixotropic or shear-thinning nature of the froth.

However, Stevens et al. specifically teaches that the bitumen froth deaeration does not take place with the addition of steam.

Opuku et al. teach an apparatus which heats a bitumen froth which includes a source of steam and inclined body which includes a bitumen inlet, outlet, steam injection means and baffle means disposed within the inclined body which functions as static mixers disposed within the inclined body to mix the bitumen froth as it travels through the inclined body.[Note Column 3, lines 35-66 and Figures 1 and 2]

Stevens et al. teach that the static deaeration condition (plate separator) is scaleable to a desired size. The channel height or plate gap is controlled by the desire to avoid plugging from the tramp material that can pass over the lip of the separation pressure. Stevens teaches

that the apparatus and included a plurality of static deaeration conditioner units can process up to 185,000 barrels per day of bitumen froth wherein the froth has its air content reduced to at least 8% by volume during its passage through the static deaeration conditioner. Stevens et al. further teach that a plurality of static deaeration conditioners can be used in order to facilitate deaeration of bitumen froth. Stevens et al. further teach in Figure 6, which shows a plot of discharge froth air volume versus temperature. Stevens et al. teach and recognize that by increase the froth temperature above 50°C beneficially improves the deaeration of the bitumen froth.

It would have been obvious from the teachings of Stevens et al. and Opuku et al. to uses static plate separator such as has been taught in Stevens which deaerates the bitumen froth. Stevens et al. teach a static deaerator conditioner which functionally equivalent to the apparatus which has been taught and described by applicant. The difference is that the deaeration system does not require steam additions. Stevens et al. teach that there is a clear recognition in the art, that increasing the temperature of the bitumen froth entering the static deaeration conditioner plates to above 55-60°C will improve deaeration and reduce the amount of bubbles in the froth. Thus providing a suggestion to add heat such as steam to the process to improve deaeration. Using steam in deaerating bitumen froth has been taught in Opuku et al. which is subjected to addition of steam and then flow through baffled vessel which promotes agitation. Although the control loop and temperature transmitter features are not specifically taught in Stevens et al. or Opuku there is ample teaching in both Stevens et al. that using sensing devices and control loops which monitors the performance of the deaeration, monitoring temperature, volume etc. of the apparatus as the apparatus performs the bitumen froth deaeration would have been obvious to one having ordinary skill in the art familiar with design of apparatus and bitumen froth deaeration processes. Opuku et al. teach that the quantity of and volume of steam added to the

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conduit are regulated to provide the maximum efficiency in heat and deaerating the froth and these are regulated and dependent in part on the temperature and quantity of air in the froth feed as well as the size and position of baffles in the conduit which effect froth flow which results in affecting mixing, deaeration and heating of the froth. Opuku et al. teach that the conduit can be fully or partially open at the top or fully enclosed with vapor exit means as illustrated in Figure 2.[Note Column 4, lines 4-13] With respect to the condensate source, this element as described by applicant is used in supplying steam to the incline heater body. Stevens et al. do teach and recognize that temperature effects bitumen froth deaeration as well as post treatment of the deaerated froth and teaches that the steam should not be superheated. [Note Column 11, lines 20-50] To add this condensate stream as a steam supply source where steam injection means has been taught would have been obvious to one having ordinary skill in the art because the steam has to come from some place, even though the steam supply source is not specifically taught steam injection means has been fully and specifically taught and supported by Opuku to add a condensate line which as the supply for steam into the incline body heater would have been obvious. With respect to the control loop and temperature transmitter etc. these types of controls would have been implicitly provided as explained in Column 4, line 3 of Opuku as Opuku teaches controlling the steam, quantity and volume and controlling the temperature of the steam in the system as well as improving the overall heat efficiency, mixing of the system and realizing that these are all inter-related process optimizations and to include control valving and control temperature sensing and detecting devices to control the efficiency of heating, and mixing of the bitumen froth with steam has been taught and suggested in Opuku and to specifically add a control loop and temperature transmitters to effect control of the system as claimed would have been obvious to one having ordinary skill in the art at the time the invention was made. It is maintained that the apparatus of Stevens et al. which is modified to include

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steam to be introduced into the apparatus such as has been taught in Opuku et al. renders applicant's invention as a whole obvious to one having ordinary skill in the art at the time the invention was made.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Spence et al. teach mechanical deaeration of bituminous froth. Bichard et al. teach a process for effectively recovering oil from tar sands. Kizior teaches a deaerator circuit for bitumen froth.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. Bhat/
Primary Examiner, Art Unit 1797